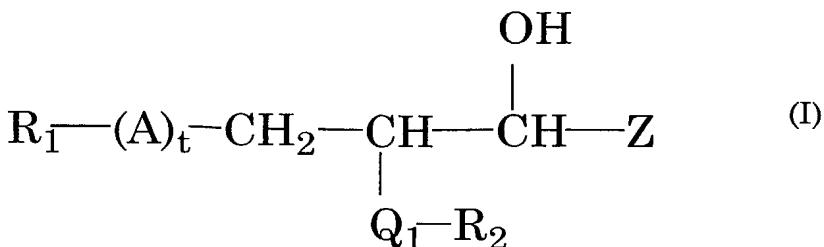


Claims

1. Use of a sphingolipid with the general formula (I):



5

wherein

Z is R_3 or $-\text{CH}(\text{OH})-\text{R}_3$;

A is sulphate, sulphonate, phosphate, phosphonate or $-\text{C}(\text{O})\text{O}-$;

R_1 is H, hydroxyl, alditol, aldose, an alcohol, C₁-C₆ alkyl or amino acid;

10 R_2 is H or unsaturated or saturated (C₁-C₃₀) alkyl chain;

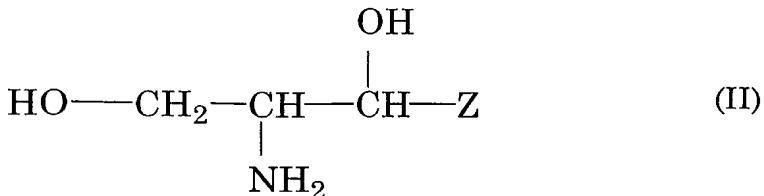
R_3 is unsaturated or saturated (C₁-C₃₀) alkyl chain;

Q_1 is a primary amine group ($-\text{NH}_2$), secondary amine group ($-\text{NH}-$) or an amide group ($-\text{NH}-\text{CO}-$); and

t is 0 or 1, or a precursor, a derivative or a pharmaceutically acceptable salt thereof,

15 for the manufacture of a medicament for the prevention and/or treatment of a disorder selected from the group consisting of insulin resistance, diabetes type 2 and Metabolic Syndrome.

2. Use of sphingolipid with the general formula (II)



20

wherein

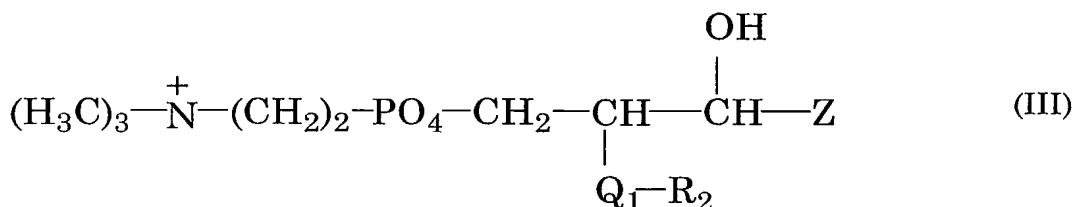
Z is R₃ or CH(OH)-R₃, and

R₃ is an unsaturated or saturated (C₁-C₃₀) alkyl chain, or a precursor, a derivative or a pharmaceutically acceptable salt thereof,

for the manufacture of a medicament for the prevention and/or treatment of a

5 disorder selected from the group consisting of insulin resistance, diabetes type 2 and Metabolic Syndrome.

3. Use of sphingolipid with the general formula (III)



10

wherein

Z is R₃ or CH(OH)-R₃, preferably R₃;

Q₁ is a primary amine group (-NH₂), a secondary amine group (-NH-) or an amide group (-NH-CO-); preferably an amide group, and

15 R₂ is H or unsaturated or saturated (C₁-C₃₀) alkyl chain;

R₃ is an unsaturated or saturated (C₁-C₃₀) alkyl chain, preferably an unsaturated (C₁-C₃₀) alkyl chain,

or a precursor, a derivative or a pharmaceutically acceptable salt thereof,

for the manufacture of a medicament for the prevention and/or treatment of a

20 disorder selected from the group consisting of insulin resistance, diabetes type 2 and Metabolic Syndrome.

4. Use of a sphingolipid in food according to the formula (I) as defined in claim 1

or formula (II) as defined in claim 2, or formula (III) as defined in claim 3, or a precursor or a derivative thereof for the prevention and/or treatment of insulin

25 resistanc, type 2 diabetes mellitus and metabolic syndrome.

5. Use according to claim 2, wherein said sphingolipid is phytosphingosine, sphingosine, sphinganine, ceramide, cerebroside and/or sphingomyelin.

6. Use according to claim 3, wherein said sphingolipid is sphingomyelin.

7. Method of preventing the occurrence of insulin resistance, diabetes type 2 and/or Metabolic Syndrome in a healthy subject comprising providing said subject a diet with enhanced levels of a sphingolipid as defined in any one of claims 1-6 or a precursor, a derivative or a pharmaceutically acceptable salt thereof.
- 5 8. Method of treatment of a subject suffering from insulin resistance, diabetes type 2 and/or Metabolic Syndrome, said method comprising administrating [spelling?] to a subject in need thereof a therapeutically effective amount of a pharmaceutical composition, said composition comprising a sphingolipid according to the formula (I) as defined in claim 1, or formula (II) as defined in claim 2, or formula (III) as defined
10 in claim 3, or a precursor, a derivative or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier, and optionally one or more excipients.
9. Use of a food item with enhanced levels of a sphingolipid according to the formula (I) as defined in claim 1, or formula (II) as defined in claim 2, or formula (III) as defined in claim 3, or a precursor or a derivative thereof for the prevention and/or
15 treatment of a disorder selected from the group consisting of insulin resistance, diabetes type 2 and Metabolic Syndrome.
10. Use of a food item with enhanced levels of a sphingolipid according to the formula (I) as defined in claim 1, or formula (II) as defined in claim 2, or formula (III) as defined in claim 3, or a precursor or a derivative thereof in a diet for lowering
20 and/or preventing insulin resistance.
11. Use of a sphingolipid as defined in any one of claims 1-3 for the manufacture of a medicament for improving the capacity for the physiological removal of glucose from the blood stream and/or for improving the capacity for maintaining blood glucose homeostasis in a subject in need thereof, preferably in insulin resistant subjects.
- 25 12. Use of a sphingolipid as defined in any one of claims 1-3 for the manufacture of a food item or food supplement for improving the capacity for the physiological removal of glucose from the blood stream and/or for improving the capacity for maintaining blood glucose homeostasis in a subject in need thereof, preferably in insulin resistant subjects.